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Natural Resources Conservation Service

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NDOP UPDATE
USDA Imagery Planning and Coordination Meeting
December 6th, 2011

Anthony Kimmet
USDA-NRCS-National Geospatial Management Center

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The following action items are from the last NDOP TMS, IADIWG and NDOP Steering Committee meetings. These were compiled from written documentation from Anne O' Connor (Census), David Davis (FSA), Doug Binnie (USGS) and Tony Kimmet (NRCS).

<u>All NDOP Issues identify potential effects on USDA Imagery Programs</u>

1) Imagery Compression Issues - Many issues to investigate. The following are broad overviews.

- **Multi-Spectral Imagery (NAIP 4 Band, Satellite 4/8+ etc…).**
- **Map Services (I.e. Citrix or other systems)**
- **Analytical Modeling – Compare Compressed vs. Non-Compressed(GeoTIFF)**
- **Pros and Cons of Licensed Formats (MrSID, ECW) vs. Non-Licensed (JPG2K)**
- **Many more issues….**

2) Geospatial data delivery practices coordination between agencies. <u>Submitted by USGS-EDC</u>

- **Cloud Practices (Public, Private Facing)**
- **Commonality of Software/Delivery Practices**
- **Specification Development and Coordination**
- **Lists of what Geospatial Products/Services are available**

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<u>All NDOP Issues identify potential effects on USDA Imagery Programs</u>

3) Camera/Sensor Characterizations

- **Focus on Digital Camera Sensors that are commonly used on 1 Meter or higher acquisitions**
- **This is a carryover action item from IADIWG Committee**

4) Check and Update NAIP Horizontal Accuracy Specifications for new 2012 IDIQ RFP.

- **Look at Kent William's presentation titled "FSA_NDOP_2012_NAIP_IDIQ_williams.pptx".**
- **Change IFTN Technical Specifications if new NAIP Horizontal Specification is adopted.**
- **Action required soon!**

5) NSGIC has asked NDOP-TMS add 3" and 6" High Resolution Orthoimagery to NDOP IFTN Specifications document.

- **Doug Binnie stated that he would start the research for request.**
- **Jim Lacy (NSGIC will assist on correspondence with other NSGIC members (i.e. Bill Burgess etc..)**

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All NDOP Issues identify potential effects on USDA Imagery Programs

6) FSA-APFO has asked NDOP-TMS too research feasibility of tone balancing 4 Band Orthoimagery?

- **How would this be specified on the NAIP 2012 RFP?**

7) USGS-EDC will investigate automated SPOT Imagery processing for ….

- **Orthorectification**
- **Pan-Sharpening**
- **This issue would be important to USDA-FAS & USGS-EDC**
- **Doug Binnie sent an e-mail on this issue to NDOP-TMS on 11/21/2011.**

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USGS announced at recent NDOP/IADIWG meetings it's near future commitment to Analog and Digital Camera Calibration.

Analog Camera Calibration Situation Today

- With less than 2 years of glass plates remaining, the need for the OSL was investigated with the premise it may close after depletion of glass plates
- However; based on MAPPS, ASPRS, and RFI feedback, USGS has decided to buy glass plates to keep the OSL operating

- Demand is down
  - # of cameras calibrated decreased to 58 in FY10
  - Expected 50 cameras in FY11; Only calibrated 40 cameras
  - Reduced staff due to reduced demand but cannot sustain 2 people needed in the OSL at current rate and demand
- Increased Cost; Price Update completed
  - Supply, maintenance and space costs have increased
  - Fee update was approved by USGS last year and took effect in February this year
- Considering removing the requirement from USGS contracts that vendors cameras must be calibration every 3 years.

USGS

Analog Camera Calibration Situation Today

- Calibration is being continued because the vendors have want it not just because USGS is requiring it.
- With cost rising and demand going down, Calibration Fees to vendors may need to increase again
- Watching demand this year to determine future

USGS

Inter-Agency Digital Imagery Working Group (IADIWG)

- **USGS announces that research funding significantly reduced in FY12.**

- **USGS EROS Digital Camera Calibration efforts stopped. Calibration ranges will be supported for research only.**

- **Inter-agency Digital Imagery Working Group (IADIWG) will not be supported and related technical staff and issues will be redirected to NDOP and NDEP as appropriate.**

- **Continuing to Perform Sensor Research to Satisfy USGS Needs**
  - **Concentrate on New Sensors or New Technologies which can be used to support Climate and Land Use Change Science.**

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Bay St. Louis, Mississippi (January, 2005)
IAIWG had dinner in this Italian Restaurant twice during the meeting!
This restaurant was destroyed by Hurricane Katrina in October, 2005!

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Show Space Shuttle Engine Test!

- The Space Shuttle had three engines and two rocket boasters that powered it into orbit.
- During the first IADIWG meeting at John C. Stennis Space Center, NASA conducted the first test of one Space Shuttle Main Engine (SSME) after the Columbia Disaster (2/1/2003).

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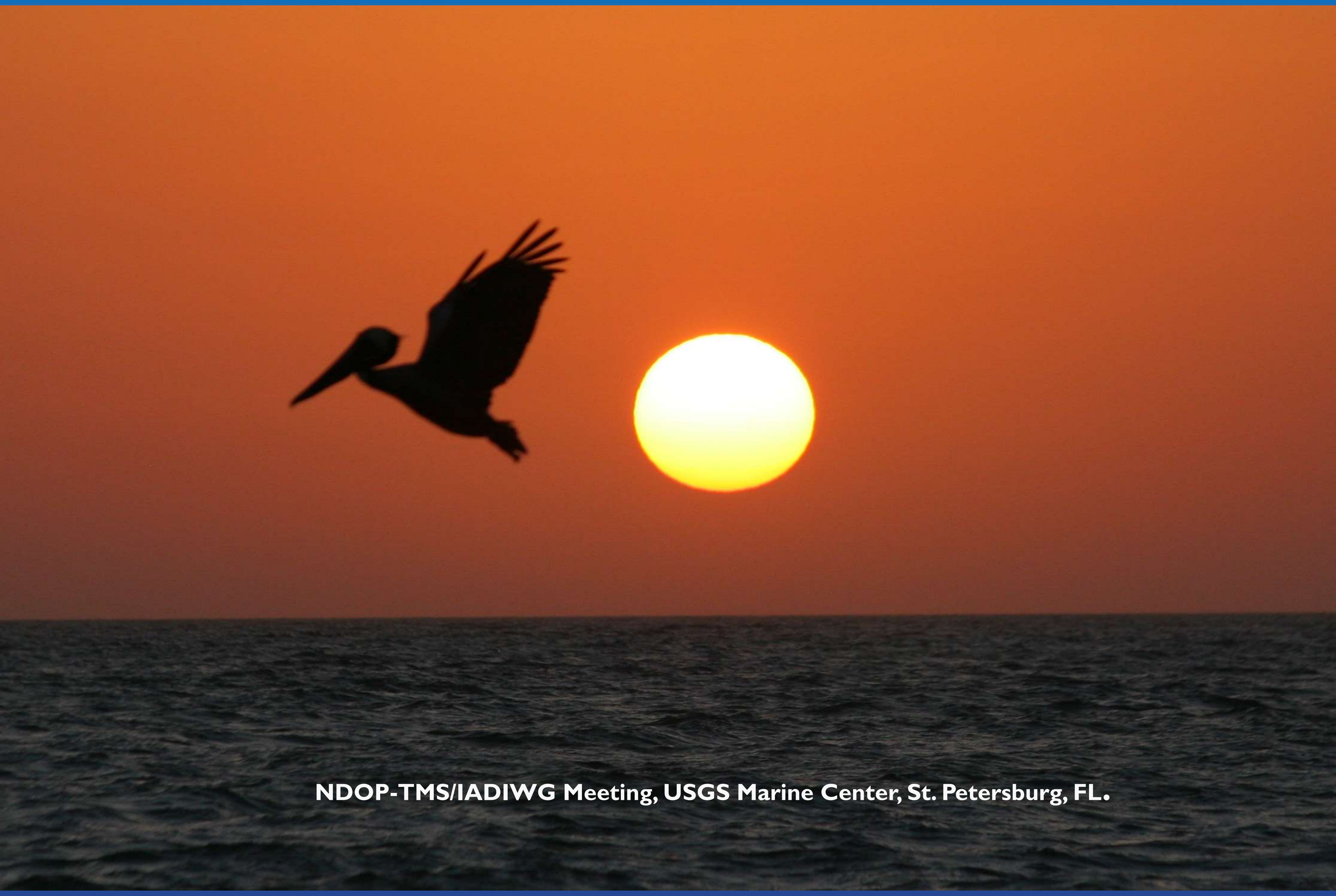

NDOP-TMS/IADIWG Meeting, USGS Marine Center, St. Petersburg, FL.


JOHN C. STENNIS SPACE CENTER
APPLIED SCIENCES DIRECTORATE
NASA

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Analog Camera Calibration Update:

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Web Map Services (I.e. Citrix or other systems)

Analytical Modeling – Compare Compressed vs. Non-Compressed(GeoTIFF)

Pros and Cons of Licensed Formats (MrSIDs, ECW) vs. Non-Licensed (JPG2K)

- **Formats -JP2, MG3, MG4, ECW, others**
- **Best practices or recommendations for individual settings for specific formats or specific software**
- **Agency and multiagency standards for compression, recommended or facilitated through NDOP**
  - **·Compression ratios -What level of compression is appropriate for different applications**
  - **·Multiband and other options for compression**
  - **·Compression of individual images**
  - **·Compression and mosaic of multiple images**
  - **·Compression of WMS or other web based delivery methods -Example, Citrix or other systems can compress the imagery and other data to enable faster deliver and refresh rates, however there can be a very real tradeoff between speed and quality**
  - **·Pros and cons of proprietary and non-proprietary formats**
  - **·Use of Compressed Data for Analytical Modeling, etc… This would include comparing non-compressed Imagery in GeoTIFF format with a variety of compression formats and compression ratios.**

2) Geospatial data delivery practices coordination between agencies

·Cloud Practices

·Commonality of Software/Delivery Practices

·Specification Development and Coordination

- Research Funding significantly reduced in FY12
- DIQA plan efforts stopped
- Continuing to Perform Sensor Research to Satisfy USGS Needs
  - Concentrate on New Sensors or New Technologies which can be used to support Climate and Land Use Change Science
  - Utilize USGS Science experts to guide areas of research
- USGS EROS Digital Camera Calibration efforts stopped
- Maintain Range Capabilities for Research only
  - Develop process for vendors use of ranges
- Continue to work with ASPRS to support in situ calibration process / standards work currently in process
- Inter-agency Digital Imagery Working Group (IADIWG) will not be supported and related technical staff and issues will be redirected to NDOP and NDEP as appropriate